



TITLE:

## Selected Grants

AUTHOR(S):

---

CITATION:

Selected Grants. ICR Annual Report 2019, 26: 107-111

ISSUE DATE:

2019

URL:

<http://hdl.handle.net/2433/250287>

RIGHT:

Copyright © 2020 Institute for Chemical Research, Kyoto University

# SELECTED GRANTS

## DIVISION OF SYNTHETIC CHEMISTRY — Organoelement Chemistry —

Tokitoh, N.  
Synthesis and Properties of Group 14 Analogues of Phenyl Anion  
Grant-in-Aid for Scientific Research (B)  
1 April 2016–31 March 2019

Mizuhata, Y.  
Creation of Novel Conjugated Molecules with Heavy Phenyl Anions as Building Blocks  
Grant-in-Aid for Scientific Research (B)  
1 April 2018–31 March 2021

Tokitoh, N.  
New Main Group Element Chemistry and Materials Science Based on Heavy Aryl Anions  
Grant-in-Aid for Scientific Research (S)  
26 June 2019–31 March 2024

Tokitoh, N.  
Synthesis of Hexasilabenzene  
Grant-in-Aid for Challenging Research (Pioneering)  
28 June 2019–31 March 2022

Yukimoto, M.  
Creation of Tautomerizable Heavy Group14-16 Double Bonded Compounds  
Grant-in-Aid for Early-Career Scientists  
1 April 2018–31 March 2022

## — Structural Organic Chemistry —

Murata, Y.  
Creation and Development of Nanoscale Laboratory  
Grant-in-Aid for Scientific Research (S)  
1 June 2017–31 March 2022

Hirose, T.  
Synthesis of  $\pi$ -Extended Helical Aromatic Molecules Towards Creation of Novel Molecular Functions with Chirality  
Grant-in-Aid for Scientific Research (C)  
1 April 2018–31 March 2021

Hashikawa, Y.  
Nanostructure Control and Creation of Novel Functions on Three-Dimensional  $\pi$ -Conjugated Molecules Using Weak Interactions  
Grant-in-Aid for Early-Career Scientists  
1 April 2018–31 March 2020

## — Synthetic Organic Chemistry —

Kawabata, T.  
Glycosylation of Unprotected Sugars and Its Application to Short-Step Total Synthesis  
The 6th Research Grant from Kobayashi Foundation  
14 February 2018–20 February 2021

Ueda, Y.  
Silyl-Group-Directed Site-Selective C-H Functionalization  
Grant-in-Aid for Early-Career Scientists  
1 April 2018–31 March 2020

Ueda, Y.  
Synthesis of Glycoside-Based Middle Molecules via Sequential Site-Selective Functionalization  
Grant-in-Aid for Scientific Research on Innovative Area “Middle Molecular Strategy: Creation of Higher Bio-Functional Molecules by Integrated Synthesis”  
1 April 2018–31 March 2020

Morisaki, K.  
Site-Selective C-H Functionalization  
Grant-in-Aid for Early-Career Scientists  
1 April 2019–31 March 2022

## DIVISION OF MATERIALS CHEMISTRY — Chemistry of Polymer Materials —

Tsujii, Y.  
Reinforcement of Resiliency of Concentrated Polymer Brushes and its Tribological Applications — Development of Novel “Soft and Resilient Tribology (SRT)” System  
ACCEL (Accelerated Innovation Research Initiative Turning Top Science and Ideas into High-Impact Values), JST  
1 September 2015–31 March 2020

## — Polymer Controlled Synthesis —

Yamago, S.  
New Organic Chemistry and Material Science of Curved  $\pi$ -Conjugated Molecules  
Grant-in-Aid for Scientific Research (S)  
1 April 2016–31 May 2020

## — Nanospintronics —

Ono, T.  
Spin-orbitronics and Device Application  
New Research Projects under Specially Promoted Research  
1 April 2015–31 March 2020

### Abbreviations and acronyms

JST : Japan Science and Technology Agency  
MEXT : Ministry of Education, Culture, Sports, Science and Technology  
METI : Ministry of Economy, Trade and Industry  
NEDO : New Energy and Industrial Technology Development Organization

**DIVISION OF BIOCHEMISTRY**  
— **Biofunctional Design-Chemistry** —

Futaki, S.  
Intracellular Fate of Extracellular Fine Particles and the Control System  
CREST (Core Research for Evolutionary Science and Technology), JST  
1 October 2018–31 March 2024

Futaki, S.  
Development of New Methods for Cytosolic Delivery of Bioactive Proteins  
Grant-in-Aid for Scientific Research (A)  
1 April 2018–31 March 2020

Imanishi, M.  
Control of RNA Modification for Antivirus Activities  
Grant-in-Aid for Scientific Research (B)  
1 April 2019–31 March 2021

Kawano, K.  
Elucidation of the Mechanism at the Influx Point Occurrence of Membrane Penetrating Peptide Using Artificial Lipid Raft  
Grant-in-Aid for Early-Career Scientists  
1 April 2018–31 March 2020

— **Chemistry of Molecular Biocatalysts** —

Yamaguchi, S.  
Molecular Mechanisms for the Timing of the Production of Stem Cells in Plants  
Grant-in-Aid for Scientific Research on Innovative Area “Principles of Pluripotent Stem Cells Underlying Plant Vitality”  
1 April 2018–31 March 2019

— **Molecular Biology** —

Aoyama, T.  
Plant Epidermal Cell Differentiation Regulated by the Transcription Factor GL2  
Grant-in-Aid for Scientific Research (B)  
1 April 2016–31 March 2020

— **Chemical Biology** —

Uesugi, M.  
Control and Analysis of Cells by Synthetic Small Molecules  
Grant-in-Aid for Scientific Research (S)  
30 May 2014–31 March 2019

Uesugi, M.  
Chemical Biological Exploration of New Functions of Endogenous Lipid-related Molecules  
AMED-CREST  
1 October 2014–31 March 2020

Uesugi, M.  
Chemical Signals of Synthetic Nutrient Conjugates  
Grant-in-Aid for Scientific Research on Innovative Areas  
1 July 2017–31 March 2022

Uesugi, M.  
Exploration of Self-Assembling Bioactive Small Molecules  
Grant-in-Aid for Scientific Research (A)  
1 April 2019–31 March 2022

Uesugi, M.  
Asian Chemical Biology Initiative  
Core-to-Core Program, JSPS  
1 April 2016–31 March 2019

Uesugi, M.  
Asian Chemical Biology Initiative  
Core-to-Core Program, JSPS  
1 April 2019–31 March 2022

**DIVISION OF ENVIRONMENTAL CHEMISTRY**  
— **Molecular Materials Chemistry** —

Kaji, H.  
Construction of Basic Science of Organic Devices by Precise Structural Analysis and Theoretical Chemical Calculation  
Grant-in-Aid for Scientific Research (A)  
1 April 2017–31 March 2020

— **Hydrospheric Environment Analytical Chemistry** —

Sohrin, Y.  
Ocean Section Study on the Basis of Stoichiometry and Stable Isotope Ratio of Trace Metals  
Grant-in-Aid for Scientific Research (A)  
1 April 2019–31 March 2023

Takano, S.  
Development of the Method for Multi-Element Isotope Ratio Analysis for the Study of Trace Metals in the Marine Environment  
Grant-in-Aid for Early-Career Scientists  
1 April 2018–31 March 2020

Zheng, L.  
Stoichiometry and Sectional Distributions of Bioactive Trace Metals in the North Pacific Ocean and the Southern Ocean  
Mitsumasa Itou Memorial Research Grant, Research Institute for Oceanochemistry Foundation  
1 April 2019–31 March 2020

Zheng, L.  
Sectional Distribution of Al, Mn, Fe, Co, Ni, Cu, Zn, Cd, Pb in the Southern North Pacific Ocean  
The Sasakawa Scientific Research Grant, The Japan Science Society  
1 April 2019–31 March 2020

— **Chemistry for Functionalized Surfaces** —

Hasegawa, T.  
Development of ROA Imaging and Its Application to Visualization of Atropisomers for a Study of Fluoroorganic Chemistry  
Grant-in-Aid for Scientific Research (A) “Analytical Chemistry”  
1 April 2015–31 March 2020

Shimoaka, T.  
Molecular Interaction Analysis for Understanding Perfluoroalkyl Compound-Specific Properties  
Grant-in-Aid for Young Scientists (B) “Analytical Chemistry”  
1 April 2017–31 March 2020

Shioya, N.  
Development of Multiple-Angle Incidence Resolution Reflection Spectrometry and Its Application to Organic Thin-Film Devices  
Grant-in-Aid for Early-Career Scientists “Analytical Chemistry”  
1 April 2019–31 March 2022

— **Molecular Microbial Science** —

Kurihara, T.  
Diversity of Acyl Groups of Phospholipids in Bacterial Cell Membranes: Its Generation Mechanism and Physiological Significance  
Grant-in-Aid for Scientific Research (B)  
1 April 2018–31 March 2021

Kurihara, T.  
Exploration and Development of Cold-Adapted Microorganisms Useful in Low-Temperature Biotechnology for Chemical Production and Environmental Conservation  
Grant-in-Aid for Scientific Research (B)  
1 April 2017–31 March 2020

Kurihara, T.  
Elucidation of the Mechanism of Extracellular Membrane Vesicle Production with a Novel Bacterium That Abundantly Produces Vesicles and Their Application  
Grant-in-Aid for Challenging Research (Exploratory)  
29 June 2018–31 March 2020

Kurihara, T.  
Elucidation of the Mechanism of Selective Protein Transport to Bacterial Extracellular Membrane Vesicles and Their Application for Construction of an Extracellular Platform for Protein Production  
A Large Research Grant from the Institute for Fermentation, Osaka  
1 April 2019–31 March 2021

Ogawa, T.  
Exploration and Functional Elucidation of a Novel Protein Involved in the Metabolism of  $\omega$ -3 Polyunsaturated Fatty Acids in Bacteria  
Grant-in-Aid for Early-Career Scientists  
1 April 2019–31 March 2021

Ogawa, T.  
Research on Bacterial Conversion of  $\omega$ -3 Polyunsaturated Fatty Acids and its Application  
A General Research Grant from the Institute for Fermentation, Osaka  
1 April 2019–31 March 2021

**DIVISION OF MULTIDISCIPLINARY CHEMISTRY**

— **Polymer Materials Science** —

Takenaka, M.  
Study on Adhesion Processes by Using 4D Analyses of GI-SAXS Innovative Adhesion Technology Based on 4-Dimensional Multi-Scale Analysis of Interface  
1 October 2018–31 March 2027

Ogawa, H.  
Development of Visualizing Method through Cooperative Small Angle x-Ray Scattering Coupled with Computed Tomography (SAXS-CT) and Information Science PRESTO (Preliminary Research for Embryonic Science and Technology), JST  
1 September 2016–31 March 2020

— **Molecular Rheology** —

Watanabe, H.  
Unified Understanding of the Polymer Dynamics under Elongational and Shear Flows  
Grant-in-Aid for Scientific Research (B)  
1 April 2019–31 March 2022

— **Molecular Aggregation Analysis** —

Wakamiya, A.  
Development of High Performance and Environmentally Friendly Perovskite Type Solar Cells  
ALCA (Advanced Low Carbon Technology Research and Development Program), JST  
16 November 2016–31 March 2021

Wakamiya, A.  
Development of Film-type Solar Cells  
COI STREAM (Center of Innovation Science and Technology Based Radical Innovation and Entrepreneurship Program), JST  
1 October 2013–31 March 2022

**ADVANCED RESEARCH CENTER FOR BEAM SCIENCE**

— **Laser Matter Interaction Science** —

Hashida, M.  
Surface Structures on Solar Cells by Advanced Laser Processing for Improving the Performance  
The Amada Foundation AF-2018203-A3  
1 October 2018–31 March 2022

Hashida, M.  
Operand Measurement by Advanced Beams for the Nanostructure Formation Mechanism  
Q-LEAP (Quantum Leap Flagship Program), Basic and Fundamental Research  
1 November 2018–31 March 2028

Inoue, S.  
Time-resolved Radiograph Measurement for Ultrafast Transient Electromagnetic Fields with Intense Laser-accelerated Short Pulse Electron  
Grant-in-Aid for Scientific Research (C)  
1 April 2018–31 March 2021

Inoue, S.  
Development of Ultrafast Transient Electric Field Observation Method for Elucidation of Femtosecond Laser Ablation Mechanism  
The Amada Foundation AF-2019236-C2  
1 April 2018–31 March 2022

— **Electron Microscopy and Crystal Chemistry** —

Kurata, H.  
Advanced Characterization Nanotechnology Platform at Kyoto University  
Nanotechnology Platform Project, MEXT  
2 July 2012–31 March 2022

Kurata, H.  
Development of Precise Spatially Resolved EELS and Analysis of Interfacial Electronic States  
Grant-in-Aid for Scientific Research (B)  
1 April 2017–31 March 2020

Kurata, H.  
Electronic Structure Analysis by Aloof Beam EELS  
Grant-in-Aid for Challenging Research  
1 April 2019–31 March 2022

Haruta, M.  
High Spatial and Energy Resolution Electronic State Mapping  
Grant-in-Aid for Scientific Research (B)  
1 April 2019–31 March 2022

## **INTERNATIONAL RESEARCH CENTER FOR ELEMENTS SCIENCE**

### **— Synthetic Organotransformation —**

Nakamura, M.  
Development of Selective Woody Molecular Transformations for Forest Chemical Industry  
Grant-in-Aid for Challenging Research (Exploratory)  
29 June 2018–31 March 2020

Takaya, H.  
Artificial Enzymes Base on Metalated Peptides  
Grant-in-Aid for Scientific Research (B)  
1 April 2017–31 March 2020

Iwamoto, T.  
Development of Novel Halogenation by Photocatalyst  
Grant-in-Aid for Early-Career Scientists  
1 April 2018–31 March 2020

### **— Advanced Solid State Chemistry —**

Shimakawa, Y.  
Solid-state Chemistry for Transition-metal Oxides: Exploring for New Materials with Novel Functionalities  
Core-to-Core Program, JSPS  
1 April 2016–31 March 2020

### **— Nanophotonics —**

Kanemitsu, Y.  
Fusing Nanomaterials and Strong Electric Field Nonlinear Optics for New Advances in Photonics  
Grant-in-Aid for Specially Promoted Research  
23 April 2019–31 March 2024

Kanemitsu, Y.  
Design of Next-Generation Flexible Photonic Devices Based on Metal Halide Perovskites  
CREST (Core Research for Evolutionary Science and Technology), JST  
1 October 2016–31 March 2022

## **BIOINFORMATICS CENTER**

### **— Chemical Life Science —**

Ogata, H.  
Deciphering the Mechanisms of Virus-Host Co-Existence in Aquatic Environments  
Grant-in-Aid for Scientific Research on Innovative Area “Neo-virology, the Raison d’Etre of Viruses”  
30 June 2016–31 March 2021

Ogata, H.  
The Biosphere of Aggregated Particles: Elucidating the Regulatory Mechanisms of Marine Carbon Cycles  
Grant-in-Aid for Scientific Research (S)  
3 July 2019–31 March 2023

Ogata, H.  
Probabilistic and Statistical Theory on Non-Abelian Topological Semigroup  $A^*$  and its Application to Environmental Microbiology and Bioengineering  
Grant-in-Aid for Scientific Research (B)  
19 July 2016–31 March 2019

Ogata, H.  
Comprehensive Understanding of the Role of Giant Viruses in Aquatic Ecosystems  
Grant-in-Aid for Scientific Research (B)  
1 April 2018–31 March 2022

Ogata, H.  
Innovative Foundation of Viral Oceanography Based on a Comprehensive Virome Study  
Grant-in-Aid for Scientific Research (B)  
1 April 2017–31 March 2020

Ogata, H.  
Elucidation of the Origin and Mechanism of Success of Diatoms through Comparative Biological Analyses between Ancient Centric Diatoms and Their Sister Paramales  
Grant-in-Aid for Scientific Research (B)  
1 April 2017–31 March 2020

Ogata, H.  
Comprehensive Study and Establishment of Application Foundation of Carboxydrotrophic Bacteria through Spatio-Temporal Search  
Grant-in-Aid for Scientific Research (S)  
1 April 2016–31 March 2021

Endo, H.  
Integrative Understanding of Marine Nitrogen Fixation Based on Global Observations from Tropics to Polar Regions  
Grant-in-Aid for Scientific Research (B)  
1 April 2019–31 March 2022

Endo, H.  
Experimental Investigation of the Effects of Phytoplankton Diversity on Ecosystem Functioning in the Ocean  
Grant-in-Aid for Early-Career Scientists  
1 April 2019–31 March 2022

Blanc-Mathieu, R.  
Unraveling Evolutionary Mechanisms That Led to the Success of Diatoms  
The Kyoto University Foundation  
1 July 2018–31 March 2019

### **— Mathematical Bioinformatics —**

Akutsu, T.  
Analysis and Application of Discrete Preimage Problems  
Grant-in-Aid for Scientific Research (A)  
1 April 2016–31 March 2023

Mori, T.  
Development of Cell Trajectory Inference and Comparison Algorithm Based on Single-cell Omics Data  
Grant-in-aid for Early-Career Scientists  
1 April 2019–31 March 2021

— **Bio-knowledge Engineering** —

Mamitsuka, H.  
Reinforcement of Resiliency of Concentrated Polymer Brushes and  
Its Tribological Applications Strategic Basic Research Program  
ACCEL (Accelerated Innovation Research Initiative Turning Top  
Science and Ideas into High-Impact Values), JST  
1 September 2015–31 March 2020

Mamitsuka, H.  
Efficient Estimation of Data Structure from Multiple Tensors  
Grant-in-Aid for Scientific Research (B)  
1 April 2019–31 March 2022

Nguyen, C. H.  
Machine Learning on Large Graphs  
Grant-in-Aid for Scientific Research (C)  
1 April 2018–31 March 2021